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THE  
ONTARIO WATER RESOURCES  
COMMISSION  
  
WATER POLLUTION SURVEY  
  
of the  
  
TOWNSHIP OF ALBION  
  
COUNTY OF PEEL

1967

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Report on a water pollution  
survey of the township of  
Albion, county of Peel.

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Report

on a

Water Pollution Survey

of the

TOWNSHIP OF ALBION

County of Peel

October 1967

District Engineers Branch

Division of Sanitary Engineering

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# R E P O R T

## ONTARIO WATER RESOURCES COMMISSION

### I INTRODUCTION

The purpose of this survey was to locate and record significant sources of water pollution within the Township of Albion. Surveys of this nature are conducted routinely throughout the Province of Ontario by the Ontario Water Resources Commission and form a basis for evaluating any existing or potential sources of pollution. When sources of pollution are found the Commission expects that corrective action will be taken by the offending parties.

### II GENERAL

The Township of Albion comprises an area of approximately 57,350 acres in the northwest section of the County of Peel. It is predominantly a farming community with some urban type development north and east of the Village of Bolton. There are pockets of rural subdivision development on large lots. Reportedly, lots of less than 10 acres and 400 feet frontage must obtain the approval of the Committee of Adjustment before building permits are issued. Further control of future development should be realized since the municipality has retained a consultant to prepare an official plan.

#### (1) Drainage

The Township of Albion with the exception of a small portion in the northeast section near Mono Mills lies within the Humber River watershed. The most important tributaries are Cold Creek and

Centreville Creek.

### III WATER USES

#### (1) Recreational

The Humber River in the vicinity of the Township of Albion is used extensively for swimming and fishing. There are several supervised recreational areas located in the township: Camp Arteband, Humber-Glen Camp, Bolton Summer Camp, Innis Lake, Albion Hills Conservation Area and the Glen Haffy Conservation Area. The latter three are open to the public and the others are operated as children's summer camps.

#### (2) Irrigation

The Humber River is used to a limited extent for irrigation of golf greens and nursery crops.

#### (3) Conservation

The Metropolitan Toronto and Region Conservation Authority has jurisdiction over the Humber River Watershed.

#### (4) Domestic Supply

The drinking-water supplies in the township are obtained by means of private wells. The wells generally yield an adequate supply of good-quality water. However, some isolated instances of excessive salt content and limited ground-water supplies in the southern portion of the township, where there are no aquifers in the overburden, have been reported.

There are no known communal water-supply systems in the township.

#### IV WATER POLLUTION

##### (1) Sanitary Waste Disposal

There are no municipal water pollution control plants within the township. Domestic wastes are treated in private sewage-disposal systems. Generally, sewage disposal on individual lots has been adequate. The only sewage-treatment facility with a discharge to a stream is at the Macville School. This system consists of a septic tank, distribution tiles and a sand filter with chlorination of the final effluent. Routine inspections by Commission field staff have generally confirmed acceptable treatment by this unit although some problems with the provision of continuous chlorination have been experienced.

##### (2) Refuse Disposal

The township operates a refuse-disposal site at Lot 18, Concession 4 on Metropolitan Toronto and Region Conservation Authority property. Providing the present method of operation is continued, no water-pollution problems are imminent.

Two disposal areas that have recently been discontinued have been covered with clean fill and graded. These sites, which are located on Sideroad Number 15, Concession 3, will require inspection periodically to determine if the filling and grading prevents surface-water pollution during seasonal runoff.

##### (3) Industrial Waste Disposal

Industry is minimal in the township. There are no known industrial waste problems. However, regular inspections of two



industries, Grogan's Slaughterhouse and Connaught Laboratories are being made by Commission field staff in order to control potential water-pollution problems.

#### V DISCUSSION OF WATER QUALITY

Samples were collected from local watercourses within the township in May, August and September, 1967. The results of the laboratory analyses are recorded in the appended table and the locations are indicated on the enclosed map.

The laboratory results indicated significant stream impairment at the township boundary, downstream from the Village of Bolton (Sampling Point H-32.6). At the time of the sampling programmes renovation of the Bolton water pollution control plant had necessitated by-passing of some of the treatment facilities. The completed alterations to the plant will eliminate this source of pollution.

Several of the samples taken on August 23, 1967, indicated a coliform count in excess of the Commission objectives. Resampling of these locations and an inspection of the areas was done on September 6, 1967. The laboratory results of some of these samples also showed the presence of coliforms.

The inspections of the areas did not reveal the source of pollution. However, the variable results of the samples may be attributed to farm stock which water in the streams or agricultural drainage. Also, some of the adverse samples were obtained from sampling point locations which are easily accessible and are,

therefore, used extensively by fishermen and in some instances as a picnic area. In two of these locations, H-47.0, Humber River at Number 30 Sideroad and H-46.3, Humber River at the Palgrave bridge, there was evidence of indiscriminate dumping of debris. The posting of the signs available to the municipality by the Information Branch of this Commission may alert the public to desist in the disposal of waste in or near a watercourse.

Previous investigations by the Commission confirmed that contaminating wastes are being discharged to Centreville Creek upstream from the township from the Village of Caledon East municipal storm sewers. Remedial measures have been requested by the Commission and the Peel County Health Unit are assisting the village to locate the sources of pollution.

## VI SUMMARY

A water pollution survey of the Township of Albion was carried out in the summer of 1967.

In general, the Humber River and its tributaries within the township were in good condition. Some stream impairment downstream from the Village of Bolton and the Village of Caledon East was revealed. The remedial requirements to deter further impairment have been dealt with in separate reports to these municipalities. Some sporadic coliform counts unrelated to any specific source of contamination were recorded. The possible sources of this impairment have been discussed.

There appears to be sufficient control over the type of approved development and the water pollution control requirements appear to be satisfied by private sewage-disposal systems. If urban development is contemplated in the proposed official plan some sort of communal disposal system would probably be required. The acceptability of any type of sewage treatment facility would be governed by the ability of the Humber River to receive wastes, as determined by waste assimilation studies.

#### VII RECOMMENDATION

The township should continue with its active interest in water pollution abatement and control in order to limit those factors of development which would contribute to the decline of the water quality.

/elc

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## EXPLANATION AND SIGNIFICANCE OF LABORATORY ANALYSES

### A Bacteriological Examination

Bacteriological examinations were performed on samples from the watercourses. The Membrane Filter technique was used to obtain a direct enumeration of coliform organisms. These organisms are normal inhabitants of the intestines of man and other warm blooded animals. They are always present in sewage and are generally minimal in other pollutants. The results of the examinations are reported as M.F. Coliform count per 100 ml.

The Commission's objective for surface waters in Ontario is a coliform count of not greater than 2,400 organisms per 100 ml.

### B Chemical Analysis

The chemical analysis performed on stream and outfall samples included determinations for biochemical oxygen demand, suspended solids and in some instances turbidity.

#### (1) Biochemical Oxygen Demand (BOD)

Biochemical oxygen demand is reported in ppm and is an indication of the amount of oxygen required for stabilization of decomposable organic matter present in sewage, polluted waters or industrial wastes. The completion of the test requires five days, under the controlled incubation temperature of 20°C.

The Commission's water quality objectives are (1) for stream water - a 5-day BOD of not greater than 4 ppm. (11) for storm sewer, sewage treatment plant and industrial waste discharges

- a 5-day BOD of not greater than 15 ppm.

(2) Solids

The laboratory does tests to determine the total and suspended solids in a sample. The value for dissolved solids is determined by taking the mathematical difference between the total and suspended solids.

The concentration of suspended solids expressed in parts per million (ppm) is generally the most significant of the solids analyses in regard to stream water and outfall discharge qualities.

The OWRC's objective for discharge is a suspended solids concentration of not greater than 15 ppm.

(3) Turbidity

Turbidity is caused by the presence of suspended matter such as clay, silt, finely divided organic matter, plankton and other microscopic organisms in water or outfall discharges. It is an expression of the optical property of a sample and the results are reported in "Turbidity Units".

(4) Alkyl Benzene Sulfonate (ABS)

The alkyl benzene sulfonate portion of the anionic detergents is reported in parts per million. The test is generally employed to detect the presence of domestic wastes. The popular use of synthetic detergents for general cleaning purposes has resulted in the incidence of residual ABS in domestic waste discharges.

## ABBREVIATIONS

Estimated D.W.F.	- Estimated Dry Weather Flow
gpm	- Gallons per Minute
mgd	- Million Gallons per Day
M.F.	- Membrane Filter
ml	- Millilitre
ppm	- Parts per Million
ppb	- Parts per Billion
OWRC	- Ontario Water Resources Commission
WPCP	- Water Pollution Control Plant
BOD	- Biochemical Oxygen Demand

TOWNSHIP OF ALBION

WATER POLLUTION SURVEY

TABLE NO. 1

<u>Sampling Point No.</u>	<u>Description</u>	<u>Date</u>	<u>5-Day BOD (ppm)</u>	<u>Total (ppm)</u>	<u>Solids Susp. (ppm)</u>	<u>Diss. (ppm)</u>	<u>Anionic Detergents as ABS</u>	<u>M.F. Coliform Count per 100 ML</u>
HL-29.0	Lindsay Creek at No. 10 Sideroad.	May 24/67	1.8	310	5	305	-	184
		Aug.23/67	2.4	650	15	635	-	4,700
		Sept.6/67	-	-	-	-	-	9,000
HCC-32.6	Cold Creek at King Sideroad.	May 24/67	2.6	300	4	296	-	208
		Aug.23/67	1.3	334	6	323	0.0	254
H -32.6	Humber River at Township boundary.	May 24/67	5.8	308	6	302	-	112,000
		Aug.23/67	1.5	290	19	271	0.0	5,800
HCC-34.2	Cold Creek at No. 10 Sideroad.	May 24/67	1.8	320	1	319	-	56
		Aug.23/67	-	-	-	-	-	1,300
H -38.7	Humber River at No. 15 Sideroad	May 24/67	1.9	260	1	259	-	128
		Aug.23/67	-	-	-	-	-	1,700
H -42.3	Humber River at No. 20 Sideroad and Hwy. No. 50.	May 24/67	1.9	266	1	265	-	460
		Aug.23/67	-	-	-	-	-	270
H -44.3	Humber River at No. 25 Sideroad (6th Line).	May 24/67	1.5	302	1	301	-	40
		Aug.23/67	-	-	-	-	-	104

TABLE NO. 1 (CONTD)

Sampling Point No.	Description	Date	5-Day BOD (ppm)	Total (ppm)	Solids		Diss. (ppm)	Anionic Detergents		M.F. Coliform	
					Susp.			as	ABS	Count per	100 ML
H -46.3	Humber River at Palgrave at Hwy. No. 50.	May 24/67	2.7	280	1		279	-		664	
		Aug.23/67	-	-	-		-	-		390	
HCE-46.8	Centreville Creek at No.20 Sideroad.	May 24/67	2.1	276	1		275	-		40	
		Aug.23/67	-	-	-		-	-		55,000	
		Sept.6/67	-	-	-		-	-		2,600	
H -47.0	Humber River at No. 30 Sideroad.	May 24/67	1.5	272	1		271	-		44	
		Aug.23/67	-	-	-		-	-		3,300	
		Sept.6/67	-	-	-		-	-		590	
H -47.3	Humber River north of Palgrave at Hwy. No. 50.	May 24/67	1.9	284	1		283	-		430	
		Aug.23/67	-	-	-		-	-		2,400	
		Sept.6/67	-	-	-		-	-		1,700	
HCE-50.7	Centreville Creek at No. 25 Sideroad.	May 24/67	1.6	206	1		205	-		148	
		Aug.23/67	-	-	-		-	-		3,000	
		Sept.6/67	-	-	-		-	-		3,100	
HCC-35.9	Cold Creek at No. 15 Sideroad.	May 24/67	2.2	332	1		331	-		232	
		Aug.23/67	-	-	-		-	-		20,000	
		Sept.6/67	-	-	-		-	-		5,100	



